

Arc Protection System REA



- Minimizes material damage and allows smooth, safe power restoration
- Supplied with a value-adding information package
- Enables fail-safe and instantaneous arc detection
- Patented fiber-optic loops and flexible overcurrent monitoring for total protection
- Technology promotes quick reaction and cost-effective installation



The REA Arc Protection System

The REA Arc Protection System from ABB provides your substation with comprehensive protection against arc faults. It minimizes material damage and allows power distribution to be smoothly and safely restored. This system can also bring cost benefits even before an arc fault occurs. As older switchgear is more prone to arc faults, fitting an ABB arc protection system will effectively extend the life of your switchgear and make more of your investment. But even more importantly, this technology can also help save lives.

Opening a new perspective

The REA Arc Protection System is more than a first-class product. It is supplied with a value-adding information package about the product that lets you get the most from it in your application. Information such as technical data, user documentation and connection diagrams is essential to ensure smooth and efficient use of the relay throughout its lifetime.

Long-fiber technology for increased safety

The key to efficient protection is the immediate detection of arcs. The REA system utilizes a patented long-fiber sensor technology,

which enables fail-safe and instantaneous arc detection anywhere within the switchgear enclosure. This tough, unshielded fiber-optic cable runs throughout the switchgear enclosure and senses the intense light from a developing arc, no matter where it strikes.

Faster protection than ever

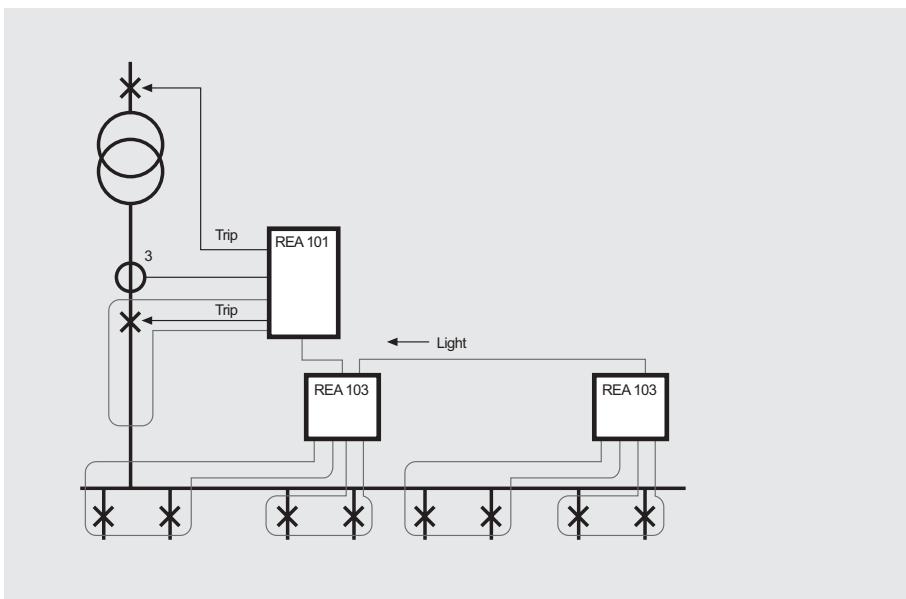
Among other advantages, long-fiber technology promotes quick reaction and cost-effective installation, which is ideally suited to multi-chamber low or medium voltage air-insulated switchgears. It is here that the system's fast Insulated Gate Bipolar Transistor (IGBT) solid-state circuits react instantly (<2.5 ms) to isolate the arc, long before any extensive damage can occur, causing long and devastatingly expensive downtime.

Peace of mind guaranteed

The REA Arc Protection System is second to none when it comes to reliability: continuous self-monitoring of the system, and its fiber-optic loops ensure non-stop protection. Flexible overcurrent monitoring allows both light or light and overcurrent operation to trigger a circuit-breaker for absolute security. Furthermore, the system can be installed in either retrofit installations or greenfield investments. Selective indication and zone-divided protection are easy to implement. Extension units allow single feeders or bus bars to be isolated, maintaining the power supply even in the event of an arc incident. Combined with zone-divided protection, this allows you to pinpoint exactly where the arc occurred. What's more, if one feeder is isolated during maintenance, the rest of the system remains fully protected against arcs.

The intelligent investment

Whether caused by human error, a faulty device or bad insulators, arc faults expose your switchgear and other costly equipment to severe pressure and heat, not to mention the danger to human life. Simply put, the REA Arc Protection System is the far-sighted way to improve productivity and increase profits while enhancing safety. It is a secure investment in your future competitiveness in more ways than one and will pay for itself many times over.



Technical Data REA Arc Protection System

Functions and features

- Extremely short overall operating time (<2.5 ms)
- Fast, adjustable three-phase overcurrent or two-phase overcurrent and neutral current condition to secure tripping
- Long-sensor fiber or light collecting lens-type sensors
- Current measurement with inbuilt CTs
- Circuit-breaker failure protection
- Continuous self-supervision of sensor fiber loops, operating voltages and cabling between central units and extension units
- Wide area automatic or manual backlight compensation
- Power consumption 9...12 W

The REA 101 Central unit:

- Two high-speed solid-state (Insulated Gate Bipolar Transistor) outputs for tripping CBs
- Selective tripping by additional extension units
- Two opto-connectors for fast signal transfer of light/current/trip signals between central units
- Relay output for circuit-breaker failure protection or as an alarm output
- Two RJ-45-type ports for chaining max. 5 extension units per port

Extension units for detecting the arc:

REA 103

- Two sensor fibers in loop or radial arrangement
- Two signal relays activated by light

REA 105

- Loop-type or radial sensor fiber
- Two high-speed semi-conductor outputs for tripping CBs
- Signal relay activated by light
- Can serve as link between two REA 101 relays

REA 107

- Eight lens sensors in radial arrangement
- Two signal relays activated by light



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